

What is claimed is:

1. A clock delay adjusting method of a semiconductor integrated circuit device,

wherein a plurality of source points for adjusting a clock delay is provided in order to synchronize a value of the clock delay from each of the source points of each of hierarchical blocks in a semiconductor chip to a clock input circuit to be operated synchronously with a clock depending on a circuit design condition of the hierarchical block, and

an area terminal is provided in the source point, and a clock input terminal of the semiconductor chip and each area terminal are connected through a clock line so as to be clock distributed over a hierarchical top and

a clock delay between the hierarchical blocks is adjusted.

2. The clock delay adjusting method according to claim 1, wherein at least one of the hierarchical blocks has a plurality of area terminals in such a manner that a wiring length between the clock input terminal of the semiconductor chip and the area terminal is equal.

3. The clock delay adjusting method according to claim 1, wherein the area terminal is a special input terminal for a clock input.

4. The clock delay adjusting method of a semiconductor integrated circuit device according to any of claims 1 to 3, wherein the clock input terminal of the semiconductor chip and the area terminal are connected through a clock distribution to obtain such a wiring length as to compensate for a variation in the clock delay value of the source point in the hierarchical block.

5. The clock delay adjusting method of a semiconductor integrated circuit device according to any of claims 1 to 3, wherein when a clock delay between the hierarchical blocks of one chip through an equal-length wiring is adjusted from the clock input terminal of the semiconductor chip to the special area terminal for a clock input of the hierarchical block and a place in which the clock delay value does not satisfy a synchronous desired value is then generated over the clock line from the special area terminal for a clock input in a certain hierarchical block to the clock input circuit, a delay adjusting buffer circuit is inserted in a place on the clock line to be an object again, thereby adjusting the clock delay and synchronizing the clock delay between the hierarchical blocks of one chip.

6. A clock delay adjusting method of a semiconductor integrated circuit device, wherein an area terminal for a clock

input is provided in at least one place over at least one hierarchical block in a semiconductor chip in a clock wiring design of the semiconductor chip, a clock input terminal of the semiconductor chip and the area terminal for a clock input are wired over a hierarchical top, a difference in a delay value between the area terminal and the clock input terminal is calculated, and a clock delay is adjusted from the area terminal to a plurality of clock input circuits in order to compensate for the difference in the delay value in the hierarchical block.

7. The clock delay adjusting method according to claim 6, wherein the clock input terminal of the semiconductor chip and the area terminal for a clock input are wired over the hierarchical top in such a manner that a total clock wiring length is almost the smallest.

8. The clock delay adjusting method according to claim 6, wherein the clock input terminal of the semiconductor chip and the area terminal for a clock input are wired over the hierarchical top in such a manner that a maximum clock wiring length is almost the smallest.

9. The clock delay adjusting method according to any of claims 6 to 8, wherein a number of the clock input circuits for a clock distribution in the hierarchical block is increased from the

clock input terminal of the hierarchical top to an area terminal having a small clock delay value, and the number of the clock input circuits for a clock distribution in the hierarchical block is reduced from the clock input terminal to an area terminal having a great clock delay value, thereby adjusting a clock delay.

10. The clock delay adjusting method according to any of claims 1 or 6, wherein the clock line is formed by using a special wiring layer.

11. The clock delay adjusting method of a semiconductor integrated circuit device according to any of claims 1 or 6, wherein the clock input terminal is constituted by a plurality of clock input terminals, and forms a multisystem clock having such a structure that a clock input is carried out from the clock input terminals to one hierarchical block.

12. The clock delay adjusting method of a semiconductor integrated circuit device according to any of claims 1 or 6, wherein a repeater buffer circuit is further inserted in or between the hierarchical blocks on a wiring of the clock line over the hierarchical top, thereby suppressing waveform rounding of a clock signal.

13. The clock delay adjusting method of a semiconductor

integrated circuit device according to any of claims 1 or 6, wherein a plurality of clock input circuits is provided in the hierarchical block, and

the value of the clock delay of the clock line between a clock control circuit in the hierarchical block and each of the clock input circuits is adjusted by using a delay adjusting buffer circuit when the clock control circuit is to be inserted into the clock line to each of the clock input circuits.

14. The clock delay adjusting method of a semiconductor integrated circuit device according to any of claims 1 or 6, wherein a position of arrangement of the area terminal is adjusted in such a manner that a wiring path for the clock line obtained before a floor plan correction can also be reused after the floor plan correction.

15. A semiconductor integrated circuit device using the clock delay adjusting method of a semiconductor integrated circuit device according to any of claims 1 or 6.

16. The semiconductor integrated circuit device according to claim 15, wherein at least one of the hierarchical blocks includes a plurality of special area terminals for a clock input, and a clock line is constituted by a special wiring layer for the clock line which is provided as an upper layer on the area terminal.